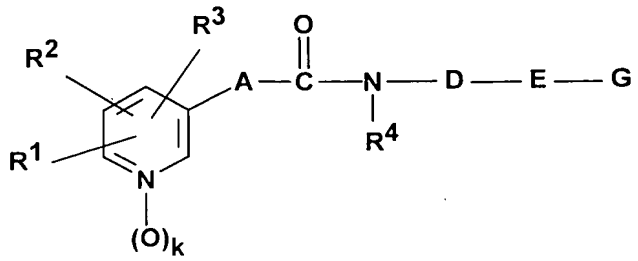
Please add the following new claims.

42. A compound of formula (I)



(I)

wherein:

R^1 is selected from the group consisting of hydrogen, halogen, cyano, C_1-C_6-alkyl, trifluoromethyl, C_3-C_8-cycloalkyl, C_1-C_4-hydroxyalkyl, hydroxy, C_1-C_4-alkoxy, benzyloxy, C_1-C_4-alkanoyloxy, C_1-C_4-alkylthio, C_2-C_5-alkoxycarbonyl, aminocarbonyl, C_3-C_9-dialkylaminocarbonyl, carboxy, phenyl, phenoxy, pyridyloxy, and NR^5R^6, wherein

R^5 and

R^6 are selected independently from each other from hydrogen and C_1-C_6-alkyl,

R^2 is selected from hydrogen, halogen, C_1-C_6-alkyl, trifluoromethyl and hydroxy,

wherein

R^1 and **R^2**, in the case they are adjacent, optionally form a bridge which is selected from $-(CH_2)_4-$, $-(CH=CH)_2-$ and $-CH_2O-CR^7R^8-O-$, wherein

R^7 and

R^8 are, independent from each other, hydrogen or C_1-C_6-alkyl,

R^3 is selected from hydrogen, halogen and C_1-C_6-alkyl,

R^4 is selected from hydrogen, C_1-C_6-alkyl, C_3-C_6-alkenyl, hydroxy, C_1-C_6-alkoxy and benzyloxy,

k is 0 or 1,

A is selected from

C_2-C_6-alkenylene, which is optionally substituted one to three-fold by C_1-C_3-alkyl, hydroxy, fluorine, cyano, or phenyl,

C_4-C_6-alkadienylene, which is optionally substituted once or twice by C_1-C_3-alkyl, fluorine, cyano, or phenyl,

1,3,5-hexatrienylene, which is optionally substituted by C_1-C_3-alkyl, fluorine, or cyano, and

ethinylene,

D is selected from

C_1-C_{10}-alkylene, optionally substituted once or twice by C_1-C_3-alkyl or hydroxy,

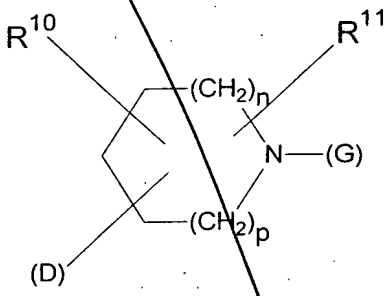
C_2-C_{10}-alkenylene, optionally substituted once or twice by C_1-C_3-alkyl or hydroxy, wherein the double bond optionally is to ring E,

C_3-C_{10}-alkinylene, optionally substituted once or twice by C_1-C_3-alkyl or hydroxy, and

the group consisting of C_1-C_{10}-alkylene, C_2-C_{10}-alkenylene and C_3-C_{10}-alkinylene, wherein one to three methylene units are isosterically replaced by O, S, NR^9, CO, SO or SO_2, wherein

R^9 is selected from hydrogen, C_1-C_3-alkyl, C_1-C_6-acyl and methanesulfonyl,

E is



(E1),

wherein

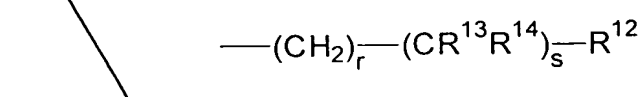
n and **p** are, independent of each other, 0, 1, or 2, with the proviso that **n** + **p** = 2,

R^{10} is selected from hydrogen, C_1-C_3-alkyl, hydroxy, hydroxymethyl, carboxy and C_2-C_7-alkoxycarbonyl,

R^{11} is hydrogen or an oxo group adjacent to the nitrogen atom,

G is selected from hydrogen, **G1**, **G2**, **G3**, **G4** and **G5**, wherein

G1 represents the residue



$$—(CH_2)_r—(CR^{13}R^{14})_s—R^{12} \qquad (G1)$$

wherein

r is 0, 1 or 2, and

s is 0 or 1,

R^{12} is selected from

hydrogen, C_1-C_6-alkyl, C_3-C_6-alkenyl, C_3-C_6-alkinyl, C_3-C_8-cycloalkyl,

benzyl, phenyl,

the group consisting of monocyclic aromatic five- and six-membered heterocycles, which contain one to three hetero-atoms selected from N, S and O and are either bound directly or over a methylene group,

the group consisting of anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the bond occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group, and

the group consisting of anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from N, S and O and

the bond occurs either over an aromatic or a hydrogenated ring, and either directly or over a methylene group,

R^{13} has the same meaning as **R^{12}**, but is selected independently thereof,

R^{14} is selected from

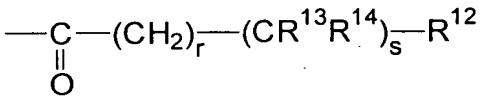
hydrogen, hydroxy, methyl, benzyl, phenyl,

the group consisting of monocyclic aromatic five- and six-membered heterocycles, which contain one to three hetero-atoms selected from N, S and O and are bound either directly or over a methylene group,

the group consisting of anellated bi- and tricyclic aromatic or partially hydrogenated carbocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein the bond occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group, and

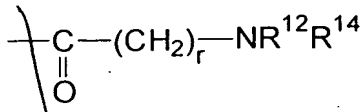
the group consisting of anellated bi- and tricyclic aromatic or partially hydrogenated heterocyclic ring systems with 8 to 16 ring atoms and at least one aromatic ring, wherein one to three ring atoms are selected from N, S and O and the bond occurs either over an aromatic or a hydrogenated ring and either directly or over a methylene group,

G2 is selected from



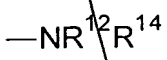
(G2a)

and



(G2b),

wherein $\mathbf{R^{12}}$ and $\mathbf{R^{14}}$ have the above meaning, or the group

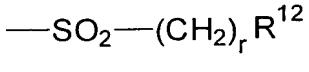


is a nitrogen-containing heterocycle bound over the nitrogen atom, the nitrogen-containing heterocycle being selected from

the group consisting of saturated and unsaturated monocyclic, four- to eight-membered heterocycles, which, aside from the essential nitrogen atom, optionally contain one or two further hetero-atoms selected from N, S and O, and

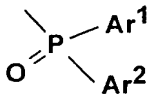
the group consisting of saturated and unsaturated bi- or tricyclic, anellated or bridged heterocycles with 8 to 16 ring atoms, which, aside from the essential nitrogen atom, optionally contain one or two further hetero-atoms selected from N, S and O,

G3 is the residue



(G3),

G4 is the residue



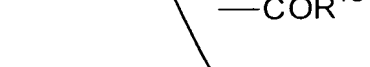
(G4),

wherein

Ar^1 and

Ar^2 are selected independently of each other from phenyl, pyridyl and naphthyl,

G5 is the residue



(G5),

wherein

R^{15} is selected from trifluoromethyl, C_1-C_6-alkoxy, C_3-C_6-alkenyloxy and benzyloxy,

wherein aromatic ring systems in the substituents R^1, R^2, R^4, R^{12}, R^{13}, R^{14}, R^{15}, Ar^1 and Ar^2 and in the ring system $-NR^{12}R^{14}$ optionally carry independently of each other one to three substituents which are independently selected from the group consisting of halogen, cyano, C_1-C_6-alkyl, trifluoromethyl, C_3-C_8-cycloalkyl, phenyl, benzyl, hydroxy, C_1-C_6-alkoxy, which is optionally entirely or partially substituted by fluorine, benzyloxy, phenoxy, mercapto, C_1-C_6-alkylthio, carboxy, C_1-C_6-alkoxycarbonyl, benzyloxycarbonyl, nitro, amino, mono-C_1-C_6-alkylamino, and di-(C_1-C_6-alkyl)-amino, wherein two adjacent groups of the aromatic ring or ring system optionally form an additional ring over a methylenedioxy bridge,

stereoisomers and/or mixtures thereof and pharmacologically acceptable acid addition salts

with the exception of (E)-3-(3-pyridyl)-N-[2-(1-benzylpiperidin-4-yl)ethyl]-2-propenamide hydrochloride.

43. A compound according to claim 42, wherein:

R^1 is selected from hydrogen, halogen, cyano, methyl, trifluoromethyl, hydroxy, C_1-C_4-alkoxy, ethylthio, methoxycarbonyl, tert-butoxycarbonyl, aminocarbonyl, carboxy, and phenoxy,

R^2 is selected from hydrogen, halogen, trifluoromethyl and hydroxy,

R^3 is hydrogen or halogen,

R^4 is selected from hydrogen, C_1-C_3-alkyl, hydroxy and C_1-C_3-alkoxy,

k is 0 or 1,

A is selected from C_2-C_6-alkenylene, optionally substituted once or twice by C_1-C_3-alkyl, hydroxy or fluorine,

C_4-C_6-alkadienylene, optionally substituted by C_1-C_3-alkyl or by 1 or 2 fluorine atoms, and

1,3,5-hexatrienylene, optionally substituted by fluorine,

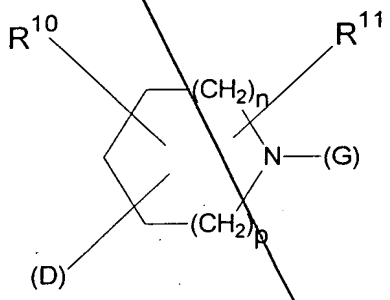
D is selected from C_1-C_8-alkylene, optionally substituted once or twice by methyl or hydroxy,

C_2-C_8-alkenylene, optionally substituted once or twice by methyl or hydroxy, wherein the double bond optionally is to ring E,

C_3-C_8-alkinylene, optionally substituted once or twice by methyl or hydroxy, and

the group consisting of C_1-C_8-alkylene, C_2-C_8-alkenylene and C_3-C_8-alkinylene, wherein one to three methylene units are isosterically replaced by O, S, NH, $N(CH_3)$, $N(COCH_3)$, $N(SO_2CH_3)$, CO, SO or SO_2,

E is



(E1)

wherein

n and

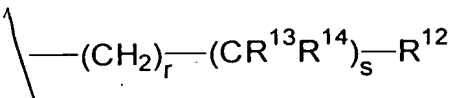
p are, independent of each other, 0, 1, or 2, with the proviso that **n** + **p** = 2,

R10 is selected from hydrogen, C_1-C_3-alkyl, hydroxy, and hydroxymethyl,

R11 is hydrogen or an oxo group which is adjacent to the nitrogen atom,

G is selected from hydrogen, **G1, G2, G3, G4** and **G5**, wherein

G1 represents the residue



(G1),

wherein

r is 0, 1 or 2 and

s is 0 or 1,

R^{12} is selected from hydrogen, C_1-C_6-alkyl, C_3-C_8-cycloalkyl, benzyl, phenyl,

the group consisting of benzocyclobutyl, indanyl, indenyl, oxoindanyl, naphthyl, dihydronaphthyl, tetrahydronaphthyl, oxotetrahydronaphthyl, biphenylenyl, fluorenyl, oxofluorenyl, anthryl, dihydroanthryl, oxodihydroanthryl, dioxodihydroanthryl, phenanthryl, dihydrophenanthryl, oxodihydrophenanthryl, dibenzocycloheptenyl, oxodibenzocycloheptenyl, dihydrodibenzocycloheptenyl, oxodihydrodibenzocycloheptenyl, dihydrodibenzocyclooctenyl, tetrahydrodibenzocyclooctenyl and oxotetrahydrodibenzocyclooctenyl, bound directly or over a methylene group,

and

the group consisting of furyl, thienyl, pyrrolyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl, thiadiazolyl, triazolyl, pyridyl, pyrazinyl, pyridazinyl, pyrimidinyl, triazinyl, imidazothiazolyl, benzofuryl, dihydrobenzofuryl, benzothienyl, dihydrobenzothienyl, indolyl, indolinyl, oxoindolinyl, dioxoindolinyl, benzoxazolyl, oxobenzoxazolinyl, benzisoxazolyl, oxobenzisoxazolinyl, benzothiazolyl, oxobenzthiazolinyl, benzoisothiazolyl, oxobenzoisothiazolinyl, benzimidazolyl, oxobenzimidazolinyl, indazolyl, oxoindazolinyl, benzofurazanyl, benzothiadiazolyl, benzotriazolyl, oxazolopyridyl, oxodihydrooxazolopyridyl, thiazolopyridyl,

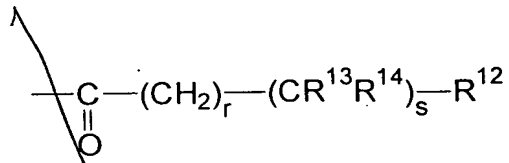
oxodihydrothiazolopyridyl, isothiazolopyridyl, imidazopyridyl, oxodihydroimidazopyridyl, pyrazolopyridyl, oxodihydropyrazolopyridyl, thienopyrimidinyl, chromanyl, chromanonyl, benzopyranyl, chromonyl, quinolyl, isoquinolyl, dihydroquinolyl, oxodihydroquinolinyl, tetrahydroquinolyl, oxotetrahydroquinolinyl, benzodioxanyl, quinoxalinyl, quinazolinyl, naphthyridinyl, carbazolyl, tetrahydrocarbazolyl, oxotetrahydrocarbazolyl, pyridoindolyl, acridinyl, oxodihydroacridinyl, phenothiazinyl, dihydrodibenzoxepinyl, oxodihydrodibenzoxepinyl, benzocycloheptathienyl, oxobenzocycloheptathienyl, dihydrothienobenzothiepinyl, oxodihydrothienobenzothiepinyl, dihydrodibenzothiepinyl, oxodihydrodibenzothiepinyl, octahydrodibenzothiepinyl, dihydrodibenzazepinyl, oxodihydrodibenzazepinyl, octahydrodibenzazepinyl, benzocycloheptapyridyl, oxobenzocycloheptapyridyl, dihydropyridobenzodiazepinyl, dihydrodibenzoxazepinyl, dihydropyridobenzoxepinyl, dihydropyridobenzoxazepinyl, oxodihydropyridobenzoxazepinyl, dihydrodibenzothiazepinyl, oxodihydrodibenzothiazepinyl, dihydropyridobenzothiazepinyl, and oxodihydropyridobenzothiazepinyl, bound directly or over a methylene group,

R^{13} has the same meaning as **R^{12}**, but is selected independently therefrom,

R^{14} is selected from hydrogen, hydroxy, methyl, benzyl, phenyl, and,

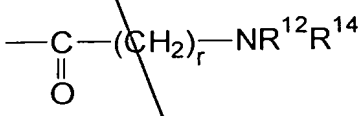
the group consisting of indanyl, indenyl, naphthyl, dihydronaphthyl, tetrahydronaphthyl, furyl, thienyl, pyrrolyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl, thiadiazolyl, triazolyl, pyridyl, pyrazinyl, pyridazinyl, pyrimidinyl, triazinyl, benzofuryl, benzothienyl, indolyl, indolinyl, benzoxazolyl, benzothiazolyl, benzimidazolyl, chromanyl, quinolyl, and tetrahydroquinolyl, bound directly or over a methylene group,

G2 is selected from



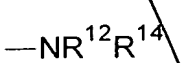
(G2a)

and



(G2b),

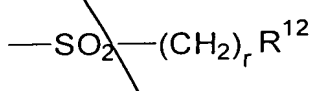
wherein $\mathbf{R^{12}}$ and $\mathbf{R^{14}}$ have the above meanings, or the group



is a nitrogen-containing heterocycle bound over the nitrogen atom, the nitrogen-containing heterocycle being selected from the group consisting of azetidine, pyrrolidine, piperidine, (1H)tetrahydropyridine, hexahydroazepine, (1H)tetrahydroazepine, octahydroazocine, pyrazolidine, piperazine, hexahydrodiazepine, morpholine, hexahydrooxazepine, thiomorpholine, thiomorpholine-1,1-dioxide, 5-aza-bicyclo[2.1.1]hexane, 2-aza-bicyclo[2.2.1]heptane, 7-aza-bicyclo[2.2.1]heptane, 2,5-diaza-bicyclo[2.2.1]-heptane, 2-aza-bicyclo[2.2.2]octane, 8-aza-bicyclo[3.2.1]octane, 2,5-diazabicyclo[2.2.2]octane, 9-azabicyclo[3.3.1]nonane, indoline, isoindoline, (1H)-dihydroquinoline, (1H)-tetrahydroquinoline, (2H)-tetrahydroisoquinoline, (1H)-tetrahydroquinoxaline, (4H)-dihydrobenzoxazine, (4H)-dihydrobenzothiazine, (1H)-tetrahydrobenzo[b]azepine, (1H)-tetrahydrobenzo[c]azepine, (1H)-tetrahydrobenzo[d]azepine, (5H)-tetrahydrobenzo[b]oxazepine, (5H)-tetrahydrobenzo[b]thiazepine, 1,2,3,4-tetrahydro-9H-pyrido[3,4-b]indole, (10H)-dihydroacridine, 1,2,3,4-tetrahydroacridanone, (10H)-phenoxazine, (10H)-phenothiazine, (5H)-dibenzazepine, (5H)-dihydrodibenzazepine, (5H)-octahydrodibenzazepine, (5H)-dihydrodibenzodiazepine, (11H)-

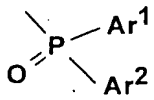
dihydrodibenzo[b,e]oxazepine, (11H)-dihydrodibenzo[b,e]thiazepine, (10H)-dihydrodibenzo[b,f]oxazepine, (10H)-dihydrodibenzo[b,f]thiazepine, and (5H)-tetrahydrodibenzazocine,

G3 is



(G3),

G4 is



(G4),

wherein

Ar^1 and

Ar^2 are selected independently of each other from phenyl, pyridyl, and naphthyl,

G5 is

(G5),

wherein

R^{15} is selected from trifluoromethyl, C_1-C_6-alkoxy, C_3-C_6-alkenyloxy, and benzyloxy,

wherein aromatic ring systems optionally are substituted independently of each other by one to three substituents independently selected from the group consisting of halogen, cyano, C_1-C_6-alkyl, trifluoromethyl, C_3-C_8-cycloalkyl, phenyl, benzyl, hydroxy, C_1-C_6-alkoxy, C_1-C_6-alkoxy entirely or partially substituted by fluorine; benzyloxy, phenoxy, mercapto, C_1-C_6-alkylthio, carboxy, C_1-C_6-alkoxycarbonyl, benzyloxycarbonyl, nitro, amino, mono-C_1-C_6-alkylamino, and di-(C_1-C_6-alkyl)-amino, wherein two adjacent groups in the ring or ring system optionally form an additional ring over a methylenedioxy bridge.

44. A compound according to claim 43, wherein:

R^1 is selected from hydrogen, halogen, cyano, methyl, trifluoromethyl, hydroxy, methoxy and methoxycarbonyl,

R^2 is hydrogen or halogen,

R^3 is hydrogen,

R^4 is selected from hydrogen, C_1-C_3-alkyl and hydroxy,

k is 0 or 1,

A is selected from C_2-C_6-alkenylene, optionally substituted once or twice by hydroxy or fluorine, or

C_4-C_6-alkadienylene, optionally substituted by one or two fluorine atoms, and

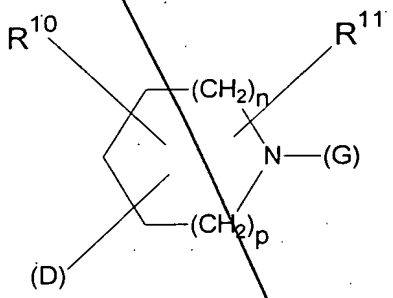
1,3,5-hexatrienylene

D is selected from C_2-C_8-alkylene, optionally substituted by methyl or hydroxy

C_2-C_8-alkenylene, optionally substituted by methyl or hydroxy, wherein the double bond optionally is to ring E, and

the group consisting of C_2-C_8-alkylene and C_2-C_8-alkenylene, wherein one to three methylene units are isosterically replaced by O, NH, $N(CH_3)$, $N(COCH_3)$, $N(SO_2CH_3)$ or CO,

E is



(E1),

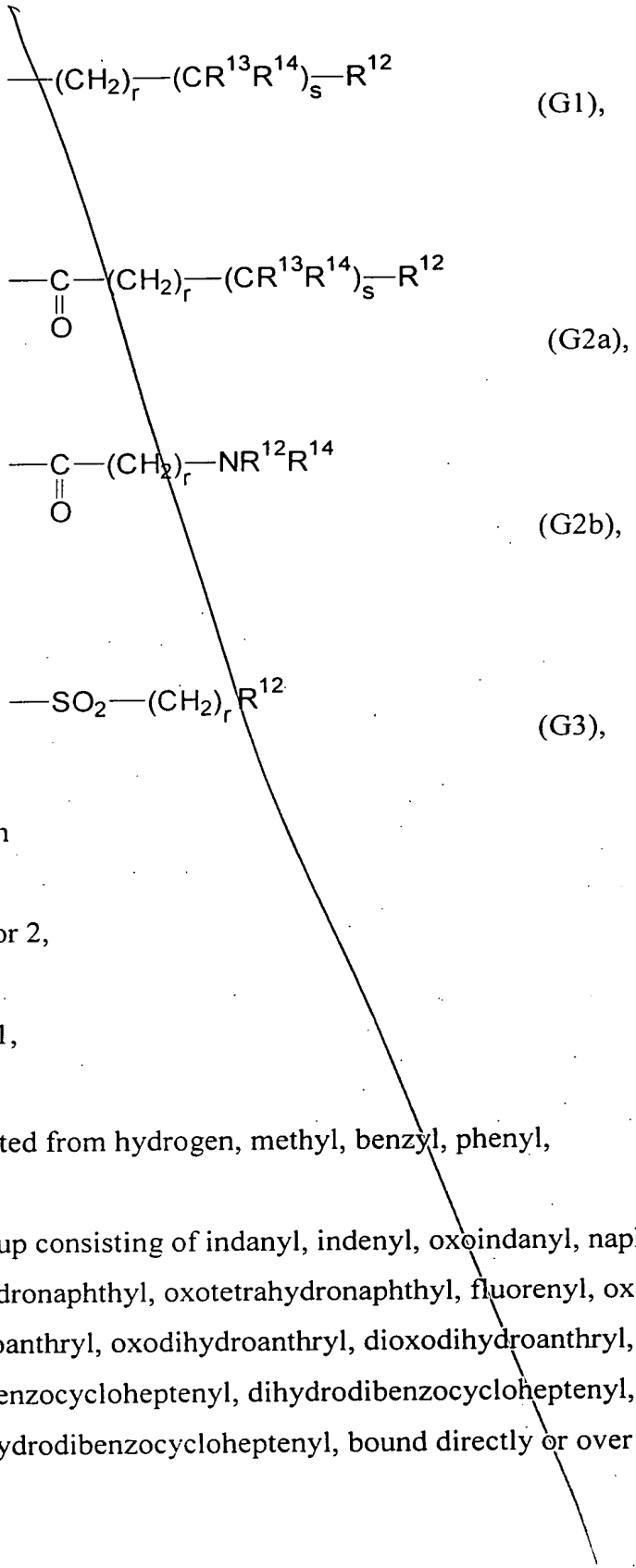
wherein

n and **p** are, independent of each other, 0, 1, or 2, with the proviso that **n** + **p** =2,

$\mathbf{R^{10}}$ is selected from hydrogen, methyl and hydroxyl,

$\mathbf{R^{11}}$ is hydrogen or an oxo group adjacent to the nitrogen atom,

G is selected from hydrogen, C_3-C_8-cycloalkyl, methoxycarbonyl, tert-butoxycarbonyl, benzyloxycarbonyl, trifluoroacetyl, diphenylphosphinoyl,



$$-(CH_2)_r-(CR^{13}R^{14})_s-R^{12} \quad \text{(G1)},$$

$$-C(=O)-(CH_2)_r-(CR^{13}R^{14})_s-R^{12} \quad \text{(G2a)},$$

$$-C(=O)-(CH_2)_r-NR^{12}R^{14} \quad \text{(G2b)},$$

and

$$-SO_2-(CH_2)_r-R^{12} \quad \text{(G3)},$$

wherein

r is 0, 1 or 2,

s is 0 or 1,

R^{12} is selected from hydrogen, methyl, benzyl, phenyl,

the group consisting of indanyl, indenyl, oxoindanyl, naphthyl, dihydronaphthyl, tetrahydronaphthyl, oxotetrahydronaphthyl, fluorenyl, oxofluorenyl, anthryl, dihydroanthryl, oxodihydroanthryl, dioxodihydroanthryl, dibenzocycloheptenyl, oxodibenzocycloheptenyl, dihydrodibenzocycloheptenyl, and oxodihydrodibenzocycloheptenyl, bound directly or over a methylene group, and

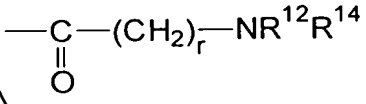
the group consisting of furyl, thienyl, pyrrolyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrazolyl, imidazolyl, oxadiazolyl, thiadiazolyl, triazolyl, pyridyl, pyrazinyl, pyridazinyl, pyrimidinyl, imidazothiazolyl, benzofuryl, dihydrobenzofuryl, benzothienyl, dihydrobenzothienyl, indolyl, indolinyl, oxoindolinyl, dioxoindolinyl, benzoxazolyl, oxobenzoxazolinyl, benzisoxazolyl, oxobenzisoxazolinyl, benzothiazolyl, oxobenzthiazolinyl, benzoisothiazolyl, oxobenzoisothiazolinyl, benzimidazolyl, oxobenzimidazolinyl, benzofurazanyl, benzothiadiazolyl, benzotriazolyl, oxazolopyridyl, oxodihydrooxazolopyridyl, thiazolopyridyl, oxodihydrothiazolopyridyl, isothiazolopyridyl, imidazopyridyl, oxodihydroimidazopyridyl, pyrazolopyridyl, thienopyrimidinyl, chromanyl, chromanonyl, benzopyranyl, chromonyl, quinolyl, isoquinolyl, dihydroquinolyl, oxodihydroquinolinyl, tetrahydroquinolyl, oxotetrahydroquinolinyl, benzodioxanyl, quinoxalinyl, quinazolinyl, naphthyridinyl, carbazolyl, tetrahydrocarbazolyl, oxotetrahydrocarbazolyl, pyridoindolyl, acridinyl, oxodihydroacridinyl, phenothiazinyl, dihydrodibenzoxepinyl, benzocycloheptathienyl, oxobenzocycloheptathienyl, dihydrothienobenzothiepinyl, oxodihydrothienobenzothiepinyl, dihydrodibenzothiepinyl, oxodihydrodibenzothiepinyl, dihydrodibenzazepinyl, oxodihydrodibenzazepinyl, octahydrodibenzazepinyl, benzocycloheptapyridyl, oxobenzocycloheptapyridyl, dihydropyridobenzoxepinyl, dihydrodibenzothiazepinyl, and oxodihydrodibenzothiazepinyl, bound directly or over a methylene group,

R^{13} is selected from hydrogen, methyl, benzyl and phenyl,

R^{14} is selected from hydrogen, hydroxy, methyl, benzyl, phenyl, and

the group consisting of naphthyl, furyl, thienyl, oxazolyl, thiazolyl, pyrazolyl, imidazolyl, oxadiazolyl, thiadiazolyl, pyridyl, benzofuryl, benzothienyl, indolyl, indolinyl, benzoxazolyl, benzothiazolyl, benzimidazolyl, chromanyl, quinolyl and tetrahydroquinolyl, bound directly or over a methylene group,

wherein in formula



(G2b)

$-NR^{12}R^{14}$ optionally is selected from pyrrolidine, piperidine, (1H)-tetrahydropyridine, hexahydroazepine, octahydroazocine, piperazine, hexahydrodiazepine, morpholine, hexahydrooxazepine, 2-azabicyclo[2.2.1]heptane, 7-azabicyclo[2.2.1]heptane, 2,5-diazabicyclo[2.2.1]heptane, 8-azabicyclo[3.2.1]octane, 2,5-diazabicyclo[2.2.2]octane, indoline, isoindoline, (1H)-dihydroquinoline, (1H)-tetrahydroquinoline, (2H)-tetrahydroisoquinoline, (1H)-tetrahydroquinoxaline, (4H)-dihydrobenzoxazine, (4H)-dihydrobenzothiazine, (1H)-tetrahydrobenzo[b]azepine, (1H)-tetrahydrobenzo[d]azepine, (5H)-tetrahydrobenzo[b]oxazepine, (5H)-tetrahydrobenzo[b]thiazepine, 1,2,3,4-tetrahydro-9H-pyrido[3,4-b]indol, (10H)-dihydroacridine, 1,2,3,4-tetrahydroacridanone, (5H)-dihydrodibenzazepine, (5H)-dihydrodibenzodiazepine, (11H)-dihydrodibenzo[b,e]oxazepine, (11H)-dihydrodibenzo[b,e]thiazepine, (10H)-dihydrodibenzo[b,f]oxazepine and (5H)-tetrahydrodibenzazocine

wherein aromatic ring systems are optionally substituted independently of each other by one to three substituents independently selected from the group consisting of halogen, cyano, C_1-C_6-alkyl, trifluoromethyl, C_3-C_8-cycloalkyl, phenyl, benzyl, hydroxy, C_1-C_6-alkoxy, C_1-C_6-alkoxy entirely or partially substituted by fluorine; benzyloxy, phenoxy, mercapto, C_1-C_6-alkylthio, carboxy, C_1-C_6-alkoxycarbonyl, benzyloxycarbonyl, nitro, amino, mono-C_1-C_6-alkylamino, and di-(C_1-C_6-alkyl)-amino, wherein two adjacent groups in the ring or ring system optionally form an additional ring over a methylenedioxy bridge.

45. A compound according to claim 44, wherein:

R^1 is selected from hydrogen, fluorine, chlorine, bromine, methyl, trifluoromethyl and hydroxy,

R^2 and

R^3 are hydrogen,

R^4 is hydrogen or hydroxy,

k is 0 or 1,

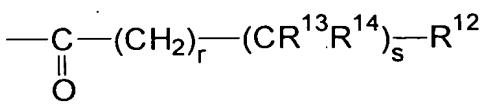
A is C_2-C_4-alkenylene or 1,3-butadienylene, which are optionally substituted by fluorine,

D is selected from C_2-C_6-alkylene, C_2-C_6-alkenylene, wherein the double bond optionally is to ring E, and the group consisting of C_2-C_6-alkylene and C_2-C_6-alkenylene, wherein a methylene unit is isosterically replaced by O, NH, $N(CH_3)$ or CO, or an ethylene group is isosterically replaced by NH-CO or CO-NH, or a propylene group is isosterically replaced by NH-CO-O or O-CO-NH,

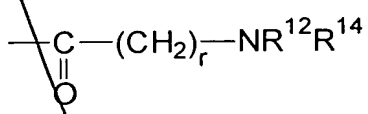
E is piperidine, wherein the heterocyclic ring optionally is substituted by an oxo group adjacent to the nitrogen atom,

G is selected from hydrogen, tert-butoxycarbonyl, diphenylphosphinoyl,

$$-(CH_2)_r-(CR^{13}R^{14})_s-R^{12} \qquad (G1),$$

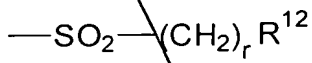


(G2a),



(G2b),

and



(G3),

wherein

r is 0 or 1,

s is 0 or 1,

R^{12} is selected from hydrogen, methyl, benzyl, phenyl,

the group consisting of indenyl, oxoindanyl, naphthyl, tetrahydronaphthyl, fluorenyl, oxofluorenyl, anthryl, dihydroanthryl, oxodihydroanthryl, dioxodihydroanthryl, dibenzocycloheptenyl, and dihydrodibenzocycloheptenyl, bound directly or over a methylene group, and

the group consisting of furyl, thienyl, oxazolyl, thiazolyl, imidazolyl, oxadiazolyl, thiadiazolyl, pyridyl, pyrazinyl, pyrimidinyl, imidazothiazolyl, benzofuryl, benzothienyl, indolyl, oxoindolinyl, dioxoindolinyl, benzoxazolyl, oxobenzoxazolinyl, benzothiazolyl, oxobenzthiazolinyl, benzimidazolyl, oxobenzimidazolinyl, benzofurazanyl, benzotriazolyl, oxazolopyridyl, oxodihydrooxazolopyridyl, thiazolopyridyl, oxodihydrothiazolopyridyl,

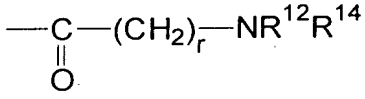
chromanyl, chromanonyl, benzopyranyl, chromonyl, quinolyl, isoquinolyl, oxodihydroquinolinyl, tetrahydroquinolyl, oxotetrahydroquinolinyl, benzodioxanyl, quinazolinyl, acridinyl, oxodihydroacridinyl, phenothiazinyl, dihydrodibenzoxepinyl, benzocycloheptathienyl, dihydrothienobenzothiepinyl, dihydrodibenzothiepinyl, oxodihydrodibenzothiepinyl, dihydrodibenzazepinyl, oxodihydrodibenzazepinyl, octahydrodibenzazepinyl, benzocycloheptapyridyl, oxobenzocycloheptapyridyl, and dihydrodibenzothiazepinyl, bound directly or over a methylene group,

R^{13} is selected from hydrogen, methyl, benzyl and phenyl,

R^{14} is selected from hydrogen, hydroxy, methyl, benzyl, phenyl, and

the group consisting of naphthyl, furyl, thienyl, pyridyl, benzofuryl, benzothienyl, indolyl, benzoxazolyl, benzothiazolyl, benzimidazolyl, chromanyl, quinolyl and tetrahydroquinolyl, bound directly or over a methylene group,

wherein in the formula



(G2b)

$-NR^{12}R^{14}$ optionally is selected from pyrrolidine, piperidine, hexahydroazepine, morpholine, 2,5-diazabicyclo[2.2.1]heptane, indoline, isoindoline, (1H)-dihydroquinoline, (1H)-tetrahydroquinoline, (2H)-tetrahydro-isoquinoline, (1H)-tetrahydrobenzo[b]azepine, (1H)-tetrahydrobenzo[d]azepine, (5H)-tetrahydrobenzo[b]oxazepine, (5H)-tetrahydrobenzo[b]thiazepine, 1,2,3,4-tetrahydroacridanone, (5H)-dihydrodibenzazepine, (11H)-dihydrodibenzo[b,e]-oxazepine and (11H)-dihydrodibenzo[b,e]thiazepine,

wherein aromatic ring systems optionally are substituted, independently of each other, by one to three substituents which are independently selected from the group consisting of halogen, cyano, C_1-C_6-alkyl, trifluoromethyl, C_3-C_8-cycloalkyl, phenyl, benzyl, hydroxy, C_1-C_6-alkoxy, C_1-C_6-alkoxy which is entirely or partially substituted by fluorine; benzyloxy, phenoxy, mercapto, C_1-C_6-alkylthio, carboxy, C_1-C_6-alkoxycarbonyl, benzyloxycarbonyl, nitro, amino, mono-C_1-C_6-alkylamino and di-(C_1-C_6-alkyl)-amino, wherein two adjacent groups on the aromatic ring or ring system optionally form an additional ring over a methylenedioxy bridge.

46. A compound according to claim 45, wherein:

R^1 is selected from hydrogen, fluorine, methyl, trifluoromethyl and hydroxy,

R^2 and

R^3 are hydrogen,

R^4 is hydrogen or hydroxy,

k is 0,

A is ethenylene or 1,3-butadienylene

D is C_2-C_6-alkylene or C_2-C_6-alkenylene, wherein the double bond optionally is to ring E,

E is piperidine,

G is selected from benzyl, phenethyl, fluorenylmethyl, anthrylmethyl, diphenylmethyl, fluorenyl, dihydrodibenzocycloheptenyl, furylmethyl, thienylmethyl, thiazolylmethyl, pyridylmethyl, benzothienylmethyl, quinolylmethyl, phenyl-thienylmethyl, phenyl-pyridylmethyl, dihydrodibenzoxepinyl, dihydrodibenzothiepinyl,

acetyl, pivaloyl, phenylacetyl, diphenylacetyl, diphenylpropionyl, naphthylacetyl, benzoyl, naphthoyl, anthrylcarbonyl, oxofluorenylcarbonyl, oxodihydro-anthrylcarbonyl, dioxodihydroanthrylcarbonyl,

furoyl, pyridylcarbonyl, chromonylcarbonyl, quinolylcarbonyl,

naphthylaminocarbonyl, dibenzylaminocarbonyl, benzylphenylaminocarbonyl, diphenylaminocarbonyl, indolinyl-1-carbonyl, dihydrodibenzazepin-N-carbonyl, tetrahydroquinolinyl-N-carbonyl, tetrahydrobenzo[b]azepinyl-N-carbonyl,

methanesulfonyl, phenylsulfonyl, p-toluenesulfonyl, naphthylsulfonyl, quinolinsulfonyl, and

diphenylphosphinoyl,

wherein aromatic ring systems optionally are substituted independently of each other by one to three substituents which are independently selected from the group consisting of halogen, cyano, C_1-C_6-alkyl, trifluoromethyl, C_3-C_8-cycloalkyl, phenyl, benzyl, hydroxy, C_1-C_6-alkoxy, C_1-C_6-alkoxy, entirely or partially substituted by fluorine; benzyloxy, phenoxy, mercapto, C_1-C_6-alkylthio, carboxy, C_1-C_6-alkoxycarbonyl, benzyloxycarbonyl, nitro, amino, mono-C_1-C_6-alkylamino and di-(C_1-C_6-alkyl)-amino, wherein two adjacent groups in the ring or ring system optionally form an additional ring over a methylenedioxy bridge.

47. A compound according to claim 42, which is selected from

N-[4-(1-methylsulfonylpiperidin-4-yl)-butyl]-3-(pyridin-3-yl)-acrylamide,

N-{4-[1-(2-naphthylsulfonyl)-piperidin-4-yl]-butyl}-3-(pyridin-3-yl)-acrylamide,

N-{4-[1-(2-naphthylsulfonyl)-piperidin-4-yl]-butyl}-5-(pyridin-3-yl)-2,4-pentadienoic acid amide,

N-{4-[1-(1-naphthylaminocarbonyl)-piperidin-4-yl]-butyl}-3-(pyridin-3-yl)-acrylamide,

N-[4-(1-diphenylaminocarbonyl-piperidin-4-yl)-butyl]-3-(pyridin-3-yl)-acrylamide,

N-[4-(1-diphenylaminocarbonyl-piperidin-4-yl)-butyl]-5-(pyridin-3-yl)-2,4-pentadienoic acid amide,

N-{4-[1-(10,11-dihydrodibenzo[b,f]azepin-5-yl-carbonyl)-piperidin-4-yl]-butyl}-3-(pyridin-3-yl)-acrylamide, and

N-[4-(1-diphenylphosphinoyl-piperidin-4-yl)-butyl]-3-(pyridin-3-yl)-acrylamide,

or a pharmaceutically acceptable acid addition salt thereof.

48. A compound according to claim 42, which is selected from

N-[4-(1-acetylpiperidin-4-yl)-butyl]-3-(pyridin-3-yl)-acrylamide,

N-[4-(1-diphenylacetyl-piperidin-4-yl)-butyl]-3-(pyridin-3-yl)-acrylamide,

N-{4-[1-(3,3-diphenylpropionyl)-piperidin-4-yl]-butyl}-3-(pyridin-3-yl)-acrylamide,

N-[4-(1-benzoylpiperidin-4-yl)-butyl]-3-(pyridin-3-yl)-acrylamide,

N-[4-(1-benzoylpiperidin-4-yl)-butyl]-5-(pyridin-3-yl)-2,4-pentadienoic acid amide, and

N-{4-[1-(9-oxo-9H-fluoren-4-yl-carbonyl)-piperidin-4-yl]-butyl}-3-(pyridin-3-yl)-acrylamide,

or a pharmaceutically acceptable acid addition salt thereof.

49. A compound according to claim 42, which is selected from

N-{4-[1-(phenylpyridin-3-yl-methyl)-piperidin-4-yl]-butyl}-3-(pyridin-3-yl)-acrylamide,

N-{4-[1-(phenylpyridin-4-yl-methyl)-piperidin-4-yl]-butyl}-3-(pyridin-3-yl)-acrylamide,

N-{4-[1-(6,11-dihydrodibenzo[b,e]oxepin-11-yl)-piperidin-4-yl]-butyl}-3-(pyridin-3-yl)-acrylamide, and

N-{4-[1-(6,11-dihydrodibenzo[b,e]thiepin-11-yl)-piperidin-4-yl]-butyl}-3-(pyridin-3-yl)-acrylamide,

or a pharmaceutically acceptable acid addition salt thereof.

50. A compound according to claim 42, which is selected from

N-[7-(1-diphenylmethylpiperidin-4-yl)-heptyl]-3-(pyridin-3-yl)-acrylamide,

N-[8-(1-diphenylmethylpiperidin-4-yl)-octyl]-3-(pyridin-3-yl)-acrylamide,

N-[3-(1-diphenylmethylpiperidin-4-yloxy)-propyl]-3-(pyridin-3-yl)-acrylamide, and

N-[3-(1-benzylpiperidin-4-yloxy)-propyl]-3-(pyridin-3-yl)-acrylamide,

or a pharmaceutically acceptable acid addition salt thereof.

51. A compound according to claim 42, which is selected from

N-[2-(1-diphenylmethylpiperidin-4-yl)-ethyl]-5-(pyridin-3-yl)-2,4- pentadienoic acid amide,

N-[4-(1-diphenylmethylpiperidin-4-yl)-butyl]-5-(pyridin-3-yl)-2,4-pentadienoic acid amide,

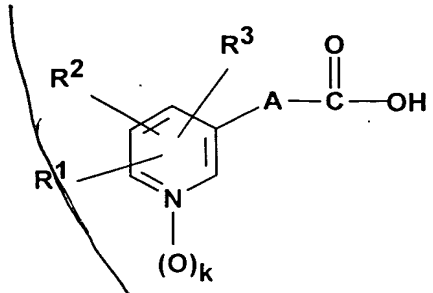
N-[5-(1-diphenylmethylpiperidin-4-yl)-pentyl]-5-(pyridin-3-yl)-2,4-pentadienoic acid amide, and

N-[6-(1-diphenylmethylpiperidin-4-yl)-hexyl]-5-(pyridin-3-yl)-2,4-pentadienoic acid amide,

or a pharmaceutically acceptable acid addition salt thereof.

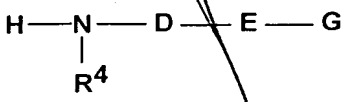
52. A method for the production of compounds according to claim 42, wherein either

(a) carboxylic acids of formula (II)



(II)

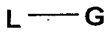
wherein R^1, R^2, R^3, A and k have the meaning given in claim 42 or their reactive derivatives are reacted with compounds of formula (III)



(III)

wherein D, E, G and R^4 have the meanings given in claim 42, or

(b) compounds of formula (I), wherein G is hydrogen, are reacted with a compound of formula (IV),

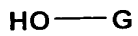


(IV),

wherein **G** has the meaning given in claim 42, with the exception of hydrogen, and **L** represents a suitable nucleofuge or reactive group, whereby the type of specific nucleofuge or reactive group L as well as the reaction conditions are dependent on the nature of the residue **G**, or

(c) compounds of formula (I), wherein **G** is hydrogen, are reacted with a suitable alkylation agent or arylation agent of formula (IV), wherein **G** represents G1, and the nucleofuge L is chlorine, bromine, iodine, or a methanesulfonyloxy-, trifluoromethanesulfonyloxy-, ethanesulfonyloxy-, benzenesulfonyloxy-, p-toluenesulfonyloxy-, p-bromobenzenesulfonyloxy- or m-nitrobenzenesulfonyloxy residue, or an epoxide group, or

(d) compounds of formula (I), wherein **G** is hydrogen, are reacted with a carboxylic, carbamic, sulfonic or phosphinic acid of formula (V),

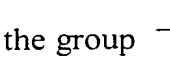


(V)

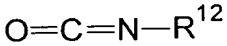
wherein **G** is an acyl, carbamoyl, sulfonyl or phosphinoyl residue or a derivative thereof, selected from symmetric carboxylic acid anhydrides, asymmetric carboxylic acid anhydrides, sulfonic acid anhydrides, acyl halides, sulfonyl halides, carbamoyl halides and phosphinic acids, and the reaction of the acids (V) or their reactive derivatives with the compounds (I), wherein G is hydrogen, optionally occurs in the presence of auxiliary bases in solvents and under conditions as they are described in variant (a), or

(e) compounds of formula (I), wherein **G** is hydrogen are reacted with a carbonyl group transmitter to an intermediate product and the latter, without its purification or previous isolation, is brought to reaction with a primary or secondary amine with the formula (VI)

(VI)

wherein R^{12} and R^{14} and the group  have the meanings according to claim 42, optionally in an absolute, inert solvent in the presence of a tertiary organic amine as an auxiliary base optionally by slowly adding the solution of compounds (I) and the auxiliary base to a solution of an equivalent amount of carbonyl group transmitter, or

(f) compounds of formula (I), wherein **G** is hydrogen, are brought into reaction with an isocyanate of the formula (VII)

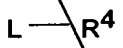


(VII)

wherein R^{12} has the meaning according to claim 42, optionally in pentane, hexane, heptane, benzene, toluene, xylene, dichloromethane, chloroform, 1,2-dichloroethane,

trichloroethylene, diethyl ether, tetrahydrofuran, dioxane, ethyl acetate, butyl acetate, formamide, dimethylformamide, or mixtures thereof, and wherein the reaction temperatures is in the range from -20°C to 150°C, or

(g) compounds of the formula (I), wherein R^4 is hydrogen, are reacted with an alkylation agent of formula (VIII)



(VIII)

wherein R^4 is C_1-C_6-alkyl or C_1-C_6-alkenyl, and L represents chlorine, bromine, iodine, methylsulfonyloxy, trifluoromethanesulfonyloxy, p-toluenesulfonyloxy, p-bromobenzenesulfonyloxy or m-nitrobenzenesulfonyloxy, and wherein the reaction is carried out in the presence of tertiary amino groups under the use of a base selected from potassium tert-butylate, sodium hydride, potassium hydride and butyl lithium in pentane, hexane, heptane, benzene, toluene, tetrahydrofuran, dioxane, dimethylsulfoxide, dimethylformamide, or N-methylpyrrolidone, wherein the reaction temperature is between -40°C and 140°C.

53. The method according to claim 52, wherein the reactive derivatives of compound (II) are selected from acid chlorides, p-nitrophenyl esters, 2,4,6-trichlorophenyl esters, pentachlorophenyl esters, cyanomethyl esters, esters of N-hydroxysuccinimide, N-hydroxyphthalimide, 1-hydroxybenzotriazol, N-hydroxypiperidine, 2-hydroxypyridine and 2-mercaptopyridine, chloroformic acid phenyl ester, chloroformic acid benzyl ester, chloroformic acid methyl ester, ethyl ester and isobutyl ester, and wherein the reaction of the compounds (II) with the compounds (III) optionally is performed in the presence of dicyclohexylcarbodiimide, 1-ethyl-3-(3-dimethylaminopropyl)-carbodiimide hydrochloride, N,N'-carbonyldiimidazol or 1-ethoxycarbonyl-2-ethoxy-1,2-dihydroquinoline, wherein

in the case of carbodiimides as a condensation agent, optionally N-hydroxysuccinimide, N-hydroxyphthalimide, 1-hydroxybenzotriazol or N-hydroxypiperidine is added, and

the compounds of formula (III) are submitted to reaction as free bases or in form of their acid addition salts the salts being selected from hydrochlorides, hydrobromides, and sulfates and the reaction of compounds of formula (II), optionally in form of their reactive derivatives, is performed with compounds (III) in benzene, toluene, xylene, dichloromethane, chloroform, 1,2-dichloroethane, trichloroethylene, diethyl ether, tetrahydrofuran, dioxane, glycol dimethyl ether, ethylacetate, acetonitrile dimethylsulfoxide, dimethylformamide or N-methylpyrrolidone, in pure form or as mixtures of two or more thereof, wherein

the reaction is optionally carried out in the presence of sodium carbonate, potassium carbonate, sodium hydrogen carbonate, potassium hydrogen carbonate, triethylamine, ethyldiisopropylamine, tributylamine, N-methylmorpholine, or pydridine, wherein a suitable excess of the compound of formula (III) optionally is used as a base, and in case of use of the compounds of formula (III) in form of their acid addition salts, the amount of the auxiliary base is considered equivalent, and

the reaction temperatures are between -40°C and 180°C .

54. The method according to claim 52, wherein according to method variant **(b)**, the reaction is carried out in benzene, toluene, xylene, tetrahydrofuran, dioxane, glycol dimethyl ether, ethylacetate, acetonitrile, acetone, ethyl methyl ketone, ethanol, isopropanol, butanol, glycol monomethyl ether, dimethylsulfoxide, dimethylformamide or N-methylpyrrolidone, wherein pure solvent or mixtures of two or more of them are used, and the reaction optionally is carried out in the presence of one or more bases selected from sodium carbonate, potassium carbonate, sodium hydrogen carbonate, potassium hydrogen carbonate, triethylamine, ethyldiisopropylamine, tributylamine, N-methylmorpholine and pydridine, and, in the case of the chlorides or bromides as

compounds (IV), optionally sodium iodide or potassium iodide is added and the reaction temperature is in the range of between 0°C and 180°C .

55. A compound according to claim 42, wherein G is hydrogen.

56. A pharmaceutical composition comprising one or more of the compounds according to claim 42 as active ingredient, optionally together with one or more pharmaceutically acceptable carriers, one or more toxicologically safe adjuvants, and optionally in combination with one or more other active ingredients.

57. The pharmaceutical composition according to claim 56, which is

in the form of a tablet, capsule, or coated tablet, optionally in sustained action or gastric fluid-resistant form,

or in the form of a liquid, peroral administration solution, a suspension, or an effervescent tablet,

or in the form of tabs or sachets, optionally in sustained action,

or in gastric fluid-resistant form,

or in the form of a suitable injection or infusion preparation together with suitable pharmaceutically acceptable carriers and adjuvants, optionally in sustained action form or as a parenteral depot medicinal form or implant

or in the form of a concentrate, powder or lyophilisate,

or in the form of an inhalation therapeutic agent, or of a spray together with suitable pharmaceutically acceptable propellants, carriers and adjuvants,

or in the form of a transdermal therapeutic system,

or in the form of a gastrointestinal therapeutic system,

or in the form of a salve, a suspension, an emulsion, a balm or a plaster,

or in the form of a controlled dosage aerosol or of a dry powder dosage formulation,

or in the form of a rectal, genital, or transurethral administration emulsion,

or in the form of a solution, a liposomal solution, an implant, a suppository or a capsule,

or in the form of a nasal, otologic or ophthalmologic composition,

or in a buccally applicable form.

58. A pharmaceutical composition according to claim 56, wherein a dosage unit for single administration contains 0.01 to 2.0 mg or 0.1 to 10 or 20 mg of the active ingredient.

59. A pharmaceutical composition according to claim 56, wherein the pharmaceutically acceptable carrier is a propellant aerosol.

60. The pharmaceutical composition according to claim 59, wherein the propellant aerosol is tetrafluoroethane, heptafluoropropane propane, butane, or dimethyl ether, or a mixture thereof.

61. The pharmaceutical composition according to claim 59, wherein the propellant aerosol contains surface active adjuvants.

62. A pharmaceutical composition according to claim 56, which contains glucose and/or lactose as a dry powder dosage.

63. A pharmaceutical composition according to claim 56, which is present in combination with a further cytostatic agent and/or immunosuppressive agent.

64. A method of treating cancer in the human or animal body comprising administering to the human or animal body an effective amount of a pharmaceutical composition of claim 56.

65. A method of suppressing immunoreactions in the human or animal body comprising administering to the human or animal body an effective amount of a pharmaceutical composition of claim 56.

66. A method of treating cancer in the human or animal body comprising administering to the human or animal body an effective amount of a pharmaceutical composition comprising (E)-3-(3-pyridyl)-N-[2-(1-benzylpiperidine-4-yl)ethyl]-2-propenamide hydrochloride as active ingredient, optionally together with a pharmaceutically acceptable carrier, a toxicologically safe adjuvant, and optionally in combination with other active ingredients.

67. A method of suppressing immunoreactions in the human or animal body comprising administering to the human or animal body an effective amount of a pharmaceutical composition comprising (E)-3-(3-pyridyl)-N-[2-(1-benzylpiperidine-4-yl)ethyl]-2-propenamide hydrochloride as active ingredient, optionally together with one or more pharmaceutically acceptable carriers, one or more toxicologically safe adjuvants, and optionally in combination with one or more other active ingredients.